REMARKS

Claims 51-60 have been added. Claims 21-30 and 51-60 remain in the application. Reconsideration of the application is requested in view of the amendments and the remarks to follow.

The Office Action states (p. 2) that the application is examined under 35 U.S.C. §102(e) prior to the AIPA amendment of 1999. The application has a filing date of April 12, 2001, as evidenced by the filing receipt.

The Action states (p. 2) that claims 8-20 and 31-50 are canceled by an Examiner's Amendment. However, no reason is provided on the record for such cancellation.

Applicant notes the requirements for a written record set forth in 37 CFR §1.2, entitled "Business to be transacted in writing". This requirement is set forth in more detail at MPEP §812.01, entitled "Telephone Restriction Practice".

This MPEP section states that "When an oral election is made, the examiner will then proceed to incorporate into the Office action a formal restriction requirement including the date of the election, the attorney's or agent's name, and a complete record of the telephone interview, followed by a complete action on the elected claims including linking or generic claims if present."

Applicant acknowledges the interview summary but notes that no grounds for restriction are provided in the Action, and no groupings of claims are provided in the present Office Action or Interview Summary and thus on

the record. Applicant believes that the Examiner's grounds for restriction are that within the ambit of 35 U.S.C. §121, the claims are directed to patentably distinct inventions.

However, the written record should reflect the Examiner's presentation of the grouping of claims and grounds for restriction. Appropriate clarification is requested.

Claims 21-30 stand rejected under 35 U.S.C. §102(e) as being anticipated by Krautschneider et al., U.S. Patent No. 5,821,591. Applicant traverses.

The §102 rejection of claims 21-30 is believed to be in error. Specifically, the PTO and Federal Circuit provide that §102 anticipation requires that each and every element of the claimed invention be disclosed in a single prior art reference. *In re Spada*, 911 F.2d 705, 15 USPQ2d 1655 (Fed. Cir. 1990). The corollary of this rule is that the absence from a cited §102 reference of any claimed element negates the anticipation. *Kloster Speedsteel AB, et al. v. Crucible, Inc., et al.*, 793 F.2d 1565, 230 USPQ 81 (Fed. Cir. 1986). No §103 rejection has been lodged regarding claims 21-30. Accordingly, if Applicant can demonstrate that the Krautschneider et al. reference does not disclose any one claimed element with respect to claims 21-30, the §102 rejections must be withdrawn, and a subsequent non-final action made with a different rejection in the event that the Examiner still finds such claims to be not allowable.

Applicant notes the requirements of MPEP §2131, which states that "TO

ANTICIPATE A CLAIM, THE REFERENCE MUST TEACH EVERY ELEMENT OF THE CLAIM." This MPEP section further states that "'A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.' *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). 'The identical invention must be shown in as complete detail as is contained in the ... claim.' *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an ipsissimis verbis test, i.e., identity of terminology is not required. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990)."

In fact, Applicant notes that in order to provide a valid finding of anticipation, several conditions must be simultaneously met. These include: (i) the invention as recited in the claim must be identically disclosed within the four corners of the reference (see MPEP §2121), (ii) the reference must enable the invention as recited in the claim (see MPEP §2121.01) and (iii) the teachings of reference may not be modified to conform to the invention as recited in the claim (see MPEP §706.02, stating that "No question of obviousness is present" in conjunction with anticipation).

Claim 21 recites "forming two series of field effect transistors over a substrate, one series being isolated from adjacent devices by shallow trench isolation, the other series having active area widths greater than one micron, the one series being formed to have active area widths less than one micron

to achieve lower threshold voltages than the other of the series", which is not taught or disclosed by Krautschneider et al.

Claim 26 recites "forming two series of field effect transistors over a substrate, at least one series being isolated from adjacent devices by shallow trench isolation, and further comprising achieving different threshold voltages between field effect transistors in different series by varying the active area widths of the field effect transistors in the series, at least one series having active area widths less than one micron", which is not taught or disclosed by Krautschneider et al.

The Office Action states (p. 3) that Krautschneider et al. teach formation of two series of FETs isolated from one another by STI. This is in error.

Krautschneider et al. teach formation of a read-only memory cell (see, e.g., Title) comprising first memory cells with planar MOS transistors and second memory cells with vertical MOS transistors (see, e.g., Abstract). The planar MOS transistors are formed on tops and on bottoms of parallel trenches. Each of these series of transistors is defined by separate implantation steps (see, e.g., col. 6, lines 21-28, first implants atop crowns of ridges; col. 7, lines 14-21, second, separate implants on sides of the ridges to form vertical MOS transistors having "a higher threshold voltage" (lines 16-17); col. 7, lines 43-47, "a third implant" forms channels at bottoms of trenches disposed between the ridges).

Krautschneider et al. state that "an insulative region" is formed in conjunction with the structure of Fig. 1, and that it may comprise STI or LOCOS. No reference number for this feature is supplied, there is no such feature shown in the Fig. and there is no particular discussion of such feature. It would appear to be a sacrificial feature used to define areas for implants 3, but attempting to determine what Krautschneider et al. state with respect to the mysterious "insulative region" results in a study in ambiguity.

What is abundantly clear from review of the teachings of Krautschneider et al. is that the final memory structure (Fig. 10) does not employ STI to separate two series of FETs. STI, as the term is employed in the relevant arts, refers to a specific process whereby a trench having a submicron depth is etched, is backfilled with an insulative layer such as TEOS and is planarized to facilitate further lithographic processing. As a result, Krautschneider et al. cannot possibly anticipate the recitation of isolation of at least one series of FETs by shallow trench isolation, as recited in claims 21 and 26.

Krautschneider et al. teach (col. 6, lines 35 et seq.) formation of trenches having a width F (line 37). As used in the relevant arts, "F" means "the smallest structure size that can be produced with a given technology" (col. 4, lines 20-21). "F" thus is not a variable, rather, on any one substrate, F will be a single number.

The text referred to in the Office Action states that: "The width of the depletion channels 3 is set to the spacing between the trenches during the

etchings of the trenches 5." How could the active area widths taught by Krautschneider et al. be any different than F when the etching of the trenches defines their width to be F (col. 6, lines 37-39)? In contrast, claim 21 explicitly recites different widths for the two series of FETs. Claim 26 explicitly recites achieving "different threshold voltages between field effect transistors in different series by varying the active area widths of the field effect transistors in the series".

Further, the cited portion of Krautschneider et al. is void of any discussion whatsoever of threshold voltages. As such, it is impossible that this text could (i) provide the invention recited in claims 21 and 26 or (ii) enable the invention as recited in claims 21 and 26, without (iii) requiring modification of the cited teachings. Additionally, combining teachings from portions of Krautschneider et al. with other portions, directed to different processing stages and formation of different circuit elements, clearly and impermissibly modifies the teachings of Krautschneider et al.

Moreover, Krautschneider et al. are silent with respect to any "other series having active area widths greater than one micron", as affirmatively recited in claim 21.

As a result, the rejection fails all three of the conditions noted above that must be simultaneously satisfied in order to find anticipation. For at least these reasons, the rejection of claims 21 and 26 is in error and should be withdrawn, and claims 21 and 26 should be allowed.

Dependent claims 22-25 and 27-30 distinguish for their own recited features not taught or disclosed by the reference. For example, claims 22 and 27 each recite, in varying language, that "the threshold voltages for the two series of field effect transistors are defined by a common channel implant", which is not taught or disclosed by Krautschneider et al. As noted above, Krautschneider et al. teach a second implant for formation of second channels having "a higher threshold voltage". As such, Krautschneider et al. do not anticipate simultaneous threshold voltage adjustment via a common or shared implant for the two series of transistors. For at least these reasons, the rejection of claims 22 and 27 is in error and should be withdrawn, and claims 22 and 27 should be allowed.

Claims 23 and 28 each recite, in varying language, that "the threshold voltages for the two series of field effect transistors are defined by a common channel implant, said implant being the only channel implant which defines the threshold voltages for the two series of field effect transistors", which is not taught or disclosed by Krautschneider et al. Since Krautschneider et al. teach separate and distinct implants for formation of a first two threshold voltages, Krautschneider et al. cannot possibly anticipate the invention as recited in claim 23 or claim 28. For at least these reasons, the rejection of claims 23 and 28 is in error and should be withdrawn, and claims 23 and 28 should be allowed.

Claims 24 and 29 each recite, in varying language, that "wherein the threshold voltages for the two series of field effect transistors are defined by

one or more common channel implants", which is not taught or disclosed by Krautschneider et al. Krautschneider et al. teach separate implants, and do not teach use of the same, or a common (meaning "shared"), implant. Accordingly, the rejection of claims 24 and 29 is in error and should be withdrawn, and claims 24 and 29 should be allowed.

Claims 25 and 30 each recite, in varying language, that "wherein the threshold voltages for the two series of field effect transistors are defined by one or more common channel implants, said common channel implants being the only channel implants which define the threshold voltages for the two series of field effect transistors", which is not taught or disclosed by Krautschneider et al.

New claims 51-60 and the amendments to the specification are supported at least by text appearing at p. 5, line 8 through p. 11, line 19 of the application as originally filed. No new matter is added by the amendments to the specification or by new claims 51-60.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page(s) are captioned "**Version with markings to show changes made**."

Further, Applicant herewith submits a duplicate copy of the Information Disclosure Statement and Form PTO 1449 filed in this application on May 22, 2001. No initialed copy of the PTO-1449 has been received back from the Examiner. To the extent that the submitted references listed on the Form PTO 1449 have not already been considered, and the Form PTO-1449 has

not been initialed with a copy being returned to Applicant, such examination and initialing is requested at this time, as well as return of a copy of the initialed Form PTO-1449 to the undersigned.

This application is believed to be in condition for allowance and action to that end is requested. The Examiner is requested to telephone the undersigned in the event that the next office action is one other than a Notice of Allowance. The undersigned is available during normal business hours (Pacific Time Zone).

Respectfully submitted,

Dated: Apr. 30, 2002 By: _____

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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37 CFR § 1.121(b)(1)(iii) AND 37 CFR § 1.121(c)(1)(ii) FILING REQUIREMENTS TO ACCOMPANY RESPONSE TO JANUARY 30, 2002 OFFICE ACTION

Deletions are bracketed, additions are underlined.